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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/805,102	03/14/2001	Takashi Kimura	P107400-00026	1508

7590

03/19/2003

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EXAMINER

NGUYEN, JOSEPH H

ART UNIT

PAPER NUMBER

2815

DATE MAILED: 03/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/805,102

Applicant(s)

KIMURA, TAKASHI

Examiner

Joseph Nguyen

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 January 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) 6-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other:

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, it is not understood the phrase "which refractive index is smaller than that of said active layer" since whether the term "refractive index" refers to the first layer of said current constriction layer or the clad layer is not clear.

Claims 2-5 are also rejected due to their dependency upon its rejected base claim 1 above.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

- (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
- (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Suyama et al.

Regarding claim 1, as best the Examiner is able to ascertain the claimed invention, Suyama et al discloses on figure 1 a semiconductor laser comprising an n type clad layer 3; a p type clad layer 5; an active layer 4 sandwiched between by said n type clad layer and said p type clad layer; and a current constriction layer for current confinement and light confinement consisting of at least two layers 9, 10 which is disposed in either of said n type clad layer and said p type clad layer, wherein a first layer 9 of said current constriction layer closer to said active layer has a different conductivity type from a conductivity type of either said clad layers in which said current constriction layer is provided and is made of a material having almost the same refractive index as said clad layer which refractive index is smaller than that of said active layer, and wherein a second layer 10 of said current constriction layer farther from said active layer 4 is made of a material having a smaller refractive index than said first layer.

Regarding claim 2, Suyama et al discloses on figure 1 said first layer 9 of said current constriction layer is formed to function mainly as a current confinement layer and said second layer 10 thereof is formed to function mainly as a light confinement layer and a width of stripe trench 7 for injecting current provided in said first layer 9 is smaller than a width of a stripe trench provided in said second layer 10.

Regarding claim 3, Suyama et al discloses on figure 1 said stripe trench 7 is formed so as to have an inclined surface with respect to a width direction of said current

constriction layer, so that a width of said stripe trench for injecting current provided in said first layer may be smaller than a width of said stripe trench provided in said second layer.

Regarding claim 4, Suyama et al discloses on figure 1 said inclined surface of said first layer 9 has a smaller inclination angle than said second layer 10.

Regarding claim 5, Suyama et al discloses on figure 1 the width of said stripe trench provided in said first layer 9 may be smaller than the width of said stripe trench provided in said second layer 10.

Note that the limitation "said stripe trench in said first layer and said stripe trench in said second layer are provided in different steps" is merely product by process and therefore not given patentable weight.

### ***Response to Arguments***

Applicant's arguments filed on 1/16/2003 have been fully considered but they are not persuasive.

With respect to claim 1, applicant argues that Suyama fails to disclose, "a first layer of the current constriction layer closer to the active layer is made of a material having almost the same refractive index as the clad layer, which refractive index is smaller than that of the active layer". However, Suyama teaches that the Al mole of the first current blocking layer 9 is preferably set to 0.12 or more (col. 9, lines 42-48). This implies that the Al more fraction of the first current blocking layer could be 0.5 which is the same Al more fraction of the clad layer 5. As a result, the refractive index of the first

current blocking layer is almost the same as that of the clad layer. Further, when the Al more fraction of the first current blocking layer is set more than 0.12, i.e., 0.15, the refractive index of the first current blocking layer is smaller than that of the active layer therein.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Nguyen whose telephone number is (703) 308-1269. The examiner can normally be reached on Monday-Friday, 7:30 am- 4:30 pm

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (703) 308-1690. The fax phone numbers for

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the organization where this application or proceeding is assigned is (703) 308-7382 for regular communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

JN  
March 17, 2003

A handwritten signature in black ink, appearing to be 'Eddie Lee', written in a cursive style.

**EDDIE LEE**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2800**